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Abstract: Online feedback mechanism, best known right now for building trust and reputation in electronic markets, are regarded as a major player in the success of many online trading communities. It can reduce sellers' anonymities, mitigate the buyers' risks, and affect the price premiums. In this paper, we investigate the relationship between feedback mechanisms and price premiums by the analysis of field data. An intelligent agent is build to collect actual data from Yahoo Auction. The research results will also allow us to better understand whether positive/negative rating has different effects. It may also clarify mediating effects of product characteristics on the relationship between reputation systems and price premiums.

Keywords: Feedback Mechanisms, Reputation, Online Auction, Trust.

I. Introduction

In the past several years market exchanges have been done in ways that were not possible before. This is due to the development of technology online business activities rapid increase. People can now perform commercial activities without meeting their trading partners (Xu & Yadav, 2003). Online auctions, as a new form of E-Commerce, provide new opportunities for people to exchange products efficiently and conveniently. According to the report of Yahoo Auction in Taiwan, transaction amount reached 10 billion NT dollars in 2003. Many sellers have even started to consider online action transactions as full-time jobs; thus raising the importance of understanding factors that impact online auctions.

Nevertheless, online trading is regarded as risky because trading parties may never have met. Traders have little knowledge about the identities of their trading partners and the real conditions and qualities of products (Xu & Yadav, 2003). According to the report announced by Internet Fraud Watch in February 2005, online auction is counted for 51% to rank first in consumers' complaints in 2004, which is about 765 dollars that each consumer loses. Here trust becomes an important issue in the online transaction environment, especially in the online auction market. It is essential for both buyers and sellers to identify the others' trustworthiness.

Online feedback mechanism, best known today as a mechanism for building trust and reputation in electronic markets, are regarded as a crucial role in the success of many online trading communities. They are large scale online word-of-mouth communities in which individuals share opinions on a wide range of topics, including products, services, and companies (Dellarocas, 2003). The feedback mechanisms can reduce the sellers' anonymity and mitigate the buyers' risks (Gefen et al., 2003). While one would expect the feedback mechanisms to benefit only the buyers, the sellers benefit as well. Strader and Ramaswami (2002) investigated the level of importance of factors affecting online buyers' decision making process. Their research result shows that trust, using feedback profiles as a proxy, significantly affects price premiums, which decreases as the transaction value increases. Ba and Pavlou (2002) also indicate that higher positive rating increases the trust of buyers and makes price premiums.

That being the case, however; it is important to note that these studies primarily depend on surveys of individuals' perceptions or observations of subjects in a controlled experimental setting. They do not account the effects of online feedback mechanisms from an actual behavior perspective. In this paper, we investigate the relationship between feedback mechanisms and price premiums by the analysis of field data. An actual behavior data illustrates the relationship between feedback mechanisms and price premiums. The research results will also allow us to have a better understanding of whether or not positive/negative rating has different effect. It may also clarify mediating effect of product characteristics on the relationship between reputation systems and price premiums.

II. Conceptual Model

Figure 1 presents the research framework for the study. Feedback profiles with both positive and negative rating affect price premiums. It is moderated by product characteristics.

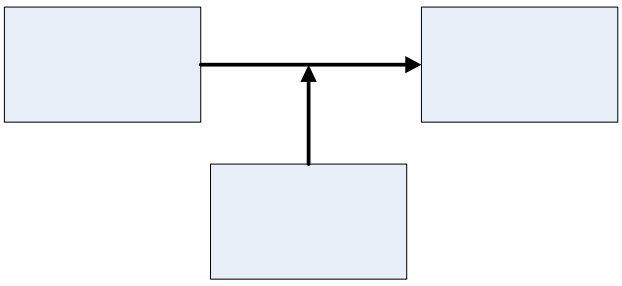

Figure 1. Research Framework

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Trust

Following Ba and Pavlou (2002), trust is defined as the subjective assessment of one party that another party will perform a particular transaction according to his or her confident expectations, in an environment characterized by uncertainty. There are three sources of trust that can be distinguished in E-Commerce (Gefen et al., 2003): calculative-based trust, institutional trust, and familiarity. Familiarity through repeated interaction are not possible in most online transactions (Xu & Yadav, 2003); because institutional structures in the online world are not yet well-developed (Fung & Lee, 1999). The most prevalent source of trust in non-repeated transaction environment is probably calculative-based trust, which means that it is not worthwhile for the opposite party to engage in opportunistic behaviors (Doney et al., 1998).

Trust is an essential component of online transaction behaviors. It reduces perceived risk and increases willingness to buy (Xu & Yadav, 2003). Pavlou and Gefen (2004) indicate that trust in the community of sellers has positive effect on transaction intentions, but significant negative effect on perceived risk of the seller community. Because buyers realize the effect of perceived risk, they are willing to compensate reputable sellers with price premiums in order to assure safe transactions. According to the definition of Ba and Pavlou (2002), price premium is the monetary amount above the average price received by multiple sellers for a certain matching product. They also find that trust of sellers has a positive effect on price premiums.

Feedback Mechanisms

Feedback mechanisms are used widely in online auction markets. They provide a place where users are able to leave comments about their buying and selling experiences and their evaluations of the buyers and sellers whom they perform the transaction with (Ba & Pavlou, 2002). They rank as positive ratings, neutral ratings, and negative ratings. Each rating equals a paired buyer-seller transaction. This mechanism allows buyers and sellers to rate each other following transactions and makes the history of a trader's past ratings public to the entire community (Dellarocas, 2003). Feedback mechanisms can be viewed as a reputation system or word-of-mouth network. It also encourages traders to behave well if they want long-run plays.

Prior researches have also shown that feedback mechanisms affect trust in Community of sellers (Pavlou & Gefen, 2004), and that trust in sellers has positive effects on price premiums (Ba & Pavlou, 2002). Strader and Ramaswami (2002) also indicated reputation of the seller as the most important factor in trust that affects online sellers' choices. Although we can't directly measure the effects of trust in the field data experiment of this research, prior study have suggested feedback mechanism as a proxy of trust. According to these researches, we can assume the effects of feedback profiles and form the following hypothesis:

H1: Sellers with better feedback gain higher price premiums compared to sellers with worse feedback.

Product Characteristics

There are a big number of product items that are investigated by online auction researches. Resnick et al. (2002) summarizes 14 previous studies of product items, as shown in Table 1. Strader and Ramaswami (2002) chose baseball cards as their product sample. This does not, however, answer the question of whether or not different products result in different outcomes of research. Ba and Pavlou (2002) investigated the moderate effects of product price. They found that the relationship between trust and price premium is stronger in expensive products. It is unknown if there exist any other characteristics of product affect trust and price premiums. For example, previous researches focus on the search goods rather than experienced goods. By categorizing the product we realize there might be different in price premiums.

There are many ways to categorize the product. Nelson (1974) defined two types of goods:

- A good is a "search good" when full information for dominant product attributes can be known prior to purchase.
- A good is an "experience good" when either condition holds:
    1. Full information on "dominant" attributes cannot be known without direct experience.
    2. Information search for "dominant" attributes is more costly/difficult than direct product experience.

Table 1. Summary of previous researches (Resnick et al., 2002)

Citation	Item sold
Ba and Pavlou (2002)	Music, software, electronics
Bajari and Hortacsu (2003)	Coins
Dewan and Hsu (2002)	Stamps
Eaton (2002)	Electric guitars
Houser and Wooders (2000)	Pentium chips
Kalyanam and McIntyre (2001)	Palm Pilot PDAs
Kauffman and Wood (2000)	Coins
Lee et al. (2000)	Computer monitors and printers
Livinston (2002)	Golf clubs
Lucking-Reiley et al. (2000)	Coins
Melnik and Alm (2002)	Gold coins
McDonald and Slawson (2002)	Dolls
Resnick and Zeckhauser (2002)	MP3 players, Beanie babies
Resnick et al. (2002)	Vintage postcards

Figueiredo (2000) argued that the ability to judge the quality of a product is the biggest differentiator among product categories on the Web. He classified the product into four categories: commodity products, quasi-commodity products, "look and feel" goods, and "look and feel" goods with variable quality; however, look and feel goods with variable, like original art or used cars, is difficult to use to analyze the effect in online auction environments. We choose two types of goods as our product categories and investigate whether or not there are different outcomes between search goods and experienced goods.

H2: The relationship between trust and price premium is moderated by product characteristics.

III. Proposed Research Methodology

This study builds an intelligent agent to collect actual behavior data from Yahoo Auction. We choose Yahoo Auction as our sample due to that it is 16 times larger than the Taiwan eBay auction market.

Figure 2 illustrates the architecture of the agent system. We implemented the intelligent agent with Asp.net and Microsoft SQL Server 2000. As depicted in figure 2, the agent can respond for parsing required data gathered from the web page of Yahoo Auction website and then filter and store it in database for future analysis. We will employ multiple regression analysis to examine the relationship between feedback mechanisms and price premiums. Independent variables are the logarithm of the number of positive and negative ratings, and the dependent variable is the price premium developed by subtracting the mean price from the final price of each product divided by its mean price. It is expressed in equation (1).

$$Price\ Premiums = \beta_0 + \beta_1 \bullet Log(PositiveRating) + \beta_2 \bullet Log(NegativeRating) + \varepsilon \quad (1)$$

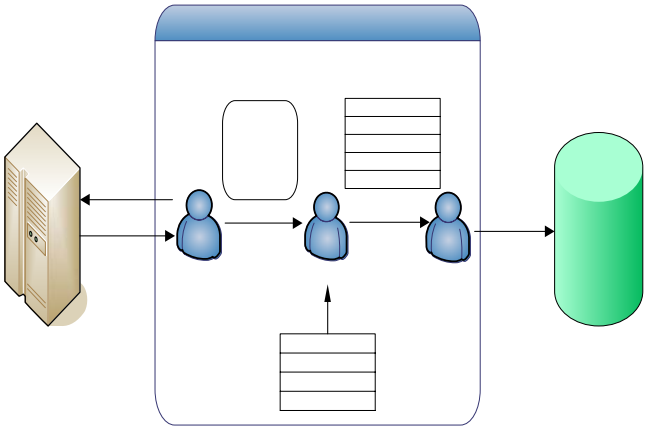

Figure 2. The System Architecture of Intelligent Agent

IV. Current State of Research

At present, the field data of Yahoo Auction bidders' behaviors is being collected. We will employ linear procedures in SPSS to approximate all parameters. By the time of the conference, we expect that the relationship between feedback mechanisms and price premiums will be fully explored. The fitness of equation and mediating effects of product characteristics will also be presented at the same time.

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